CLAIMS:

1. (previously presented) A ceramic composition comprising:

a plurality of oxide shapes;

a filler powder comprising particles of zirconia-hafnia; and

a binder material partially filling gaps between the oxide shapes and the filler powder;

wherein the filler powder particles comprise an average size of at least 30 microns and exhibit micro-cracks contained within the particles and not propagated into the binder material.

2. (original) The composition of claim 1, wherein the portion of hafnia in the zirconia-hafnia is in the range of 50-95 mol%.

3. (original) The composition of claim 1, wherein the portion of hafnia in the zirconia-hafnia is in the range of 60-75 mol%.

4. (original) The composition of claim 1, wherein the portion of hafnia in the zirconia-hafnia is at least 20 mol% and less than 100 mol%.

5. (original) The composition of claim 1, wherein the filler powder comprises composite particles each comprising zirconia-hafnia and alumina.

6. (original) The composition of claim 5, wherein the portion of alumina in the composite particles is in the range of 20-50 mol%.

7. (previously presented) The composition of claim 1, wherein the filler powder comprises particles having an average size range of 30-50 microns.

8. (original) The composition of claim 1, further comprising:

the oxide shapes comprising hollow mullite spheres;

the filler powder comprising composite particles comprising zirconia-hafnia and alumina; and

the binder material comprising alumina.

9. (original) The composition of claim 1 disposed on an oxide-oxide ceramic matrix composite substrate material.

10. (original) The composition of claim 9, wherein the portion of hafnia in the zirconia-hafnia is selected to limit a phase transformation of the zirconia-hafnia from a monoclinic phase to a tetragonal phase to occur throughout no more than 20% of a thickness of the material remote from the substrate material at a predetermined use temperature.

11. (currently amended) An article comprising:

a ceramic substrate; and

an overlayer disposed on the ceramic substrate, the overlayer comprising composite particles disposed in a ceramic matrix, the composite particles comprising alumina and monoclinic zirconia-hafnia;

wherein the composite particles further comprise micro-cracking within the particles resulting from differential thermal expansion among the particle constituents ~~disposed on the ceramic substrate~~.

12. (original) The article of claim 11, wherein the ceramic substrate comprises one of the group of alumina, mullite, yttrium aluminum garnet and zirconia.

13. (original) The article of claim 11, wherein the ceramic substrate comprises a non-oxide; and

an oxygen barrier layer interposed between the ceramic substrate and the overlayer.

14. (original) The article of claim 11, wherein the portion of hafnia in the zirconia-hafnia is in the range of 50-95 mol%.

15 (original) The article of claim 11, wherein the portion of hafnia in the zirconia-hafnia is in the range of 60-75 mol%.

16 (original) The article of claim 11, wherein the portion of hafnia in the zirconia-hafnia is at least 20 mol% and less than 100 mol%.

17 (cancelled).

18 (original) The article of claim 11, wherein the portion of alumina in the overlayer is in the range of 20-50 mol%.

19. (currently amended) An article comprising:

a ceramic matrix composite substrate;

an insulating layer comprising mullite disposed on the substrate; and

an overlayer comprising composite particles comprising an average particle size of 10-100 microns, the composite particles comprising zirconia-hafnia and alumina disposed on the insulating layer, the composite particles exhibiting micro-cracking within the particles resulting from differential thermal expansion among the particle constituents.

20. (previously presented) The article of claim 19, wherein the composite particles comprise zirconia-hafnia and a mol percentage of alumina such that the particles exhibit an elastic modulus of approximately 150 GPa.

21. (new) The article of claim 11 wherein the composite particles comprise an average size of 10-100 microns.